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| 38834 7590 11/12/2009 WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP 1250 CONNECTICUT AVENUE, NW SUITE 700 WASHINGTON, DC 20036 | | | | |
| EXAMINER | | | | |
| KRUPICKA, ADAM C | | | | |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentmail@whda.com

Office Action Summary

Application No.

10/593,050

Applicant(s)

MATSUBARA ET AL.

Examiner

Adam C. Krupicka

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2009.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
4a) Of the above claim(s) 8-11 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-7 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 28 August 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 09/15/2008
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

The election of Group I, claims 1-7, without traverse in the response filed September 23, 2009 is acknowledged. Claims 1-11 are pending, claims 8-11 are withdrawn. It is further noted that the amended claims filed October 19, 2009 are the claims addressed by this office action.

Specification

The disclosure is objected to under 37 CFR 1.71 for grammatical errors. For example, the following sentence in paragraph 0002 is not understood: "Firstly, when exemplifying the boiler tube, in the days when the operation temperature of the boiler is lower than that in these days, and erosion/corrosion environment inside the furnace is not so severe, that the steel tube for boiler (low alloy steel tube) taking into consideration of high temperature usability with respect to mechanical characteristics is made to be used in bare state is an ordinary use mode."

Applicant is required to submit an amendment which clarifies the disclosure so that the examiner may make a proper comparison of the invention with the prior art.

Applicant should also be careful not to introduce any new matter into the disclosure (i.e., matter which is not supported by the disclosure as originally filed).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3 and 4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3 and 4 recite the phrase “said alloy materials” which is considered to refer back to the coating material of claim 1 which has a weld area composition and a non-weld area composition. It is unclear in claim 3 whether applicants intend for the alloy material in both the weld area and the non-weld area to meet JIS G 4901, 4902 and have a boron content of 0.1% or less and a silicon content of 0.5 % or less and it is unclear in claim 5 whether both alloy materials are intended to meet JIS H 8303 and have a boron and silicon content of 1 to 5% respectively. These embodiments conflict with claim 1 where the weld area and non-weld area coating have different boron and silicon contents. For the purposes of examination the limitations of claim 3 will be considered to further limit the weld-area coating and the limitations of claim 4 will be considered to further limit the non-weld area coating. Additionally, for clarification of the record applicants may wish to submit a copy of the standards relied upon in the claims for further limiting the coating material.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa *et al.* (JP 07-060481) *herein referring the attached English machine translation printed November 2, 2009*, in view of Tour (US Pat. 2,875,043).

Ogawa *et al.* teach a welding material used in the welding of high chromium steels for power boilers (*considered to be a base material, which may be in the form of plates or tubes, paragraphs 0001, 0002, & 0041 and figure 1*). The weld material contains nickel at 18-30% by weight and 23-28% chromium by weight, which is considered to be an alloy of 41 to 58% total nickel and chromium (*paragraphs 0011, 0024, 0025*), and which overlaps the presently claimed nickel and chromium content of greater than one half the alloy material. Further one of ordinary skill in the art at the time of the invention would have found it obvious to adjust the nickel content to prevent high temperature embrittlement. Cracks in boilers lead to operational failures of the boiler system, and higher amounts of nickel prevent cracking in elevated temperature use, therefore one of ordinary skill in the art at the time of the invention would have found it obvious to select a nickel in the upper end of the disclosed range to prevent cracks and subsequent failure of the boiler.

Ogawa *et al.* do not appear to explicitly teach the steel parts to have a nickel-chromium coating, however Tour teaches a spray-weld alloy containing 16 to 18% by weight chromium and with the balance nickel, where the alloy contains 3.5 to 4.5% by weight silicon and 2.75 to 3.75% by weight boron (*col. 2 lines 41-45*). It would have been obvious to one of ordinary skill in the art at the time of the invention to coat the steel boiler parts of Ogawa *et al.* with the spray-weld alloy of Tour in order to improve corrosion resistance and prevent cracking due to temperature variations (*col. 2 lines 6-16*).

With regard to the composition, thickness, and width of the weld areas, it is noted that when the nickel-chromium coated steel parts are subjected to welding using the welding material of Ogawa *et al.* the weld area will have a silicon and boron composition as it is comprised of the welding material (*0.01% by weight or less boron and 0.03 to 0.1% by weight silicon, paragraph 0011*) while the area outside the weld (*considered to be the non-weld area*) will have a nickel-chromium composition consistent with the coating of Tour (*3.5 to 4.5% by weight silicon and 2.75 to 3.75% by weight boron, col. 2 lines 41-45*). The relative thickness of the weld areas and the distance the weld area covers will depend on the thickness of the parts being welded. It would have been obvious to one of ordinary skill in the art the time of the invention to adjust the size of the weld based on the thickness of the sheets being welded. Welding of thicker parts requires wider deeper welds also resulting in a thicker weld bead, and thinner parts would not require as large of a weld leading to a smaller weld area and thinner weld bead. By making the appropriate adjustments to the weld the size for a particular part the width and thickness of the weld area will vary, and therefore absent criticality in the width of the weld area and the thickness thereof, the weld area as presently claimed are not considered to be patentably distinct from the weld area arrived at by Ogawa *et al.* in view of Tour as shown above.

With regard to the nickel-chromium material meeting the JIS standards as set forth by the present claims, it is noted that both applicants and Ogawa *et al.* in view of Tour teach a boiler part with a weld area having a nickel-chromium alloy of nickel and chromium in a total amount greater than one half the alloy material having a silicon content of less than 0.1% by weight and a boron content of 0.1% by weight, and a non-weld area having a nickel alloy coating which is greater than one half nickel and chromium and 1 to 5% by weight silicon and boron respectively

(see rejection above). One of ordinary skill in the art at the time of the invention would have expected similar materials used in a similar manner to have similar properties, and therefore the nickel-chromium alloys of Ogawa *et al.* and Tour to meet the standards set forth by the present claims. “Where...the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product. Whether the rejection is based on “inherency” under 35 USC 102, on “prima facie obviousness” under 35 USC 103, jointly or alternatively, the burden of proof is the same, and its fairness is evidenced by the PTO’s inability to manufacture products or to obtain and compare prior art products. See *In re Brown*, 59 CCPA 1036, 459 F.2d 531, 173 USPQ 685 (1972).” *In re Best, Bolton and Shaw* 195 USPQ 430 (CCPA 1977).

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa *et al.* (JP 07-060481) *herein refereeing the attached English machine translation printed November 2, 2009*, in view of Tour (US Pat. 2,875,043) as applied to claims 1 and 2 above, further in view of Cochrane *et al.* (US Pat. 6,055,943)

Ogawa *et al.* in view of Tour teach a welded boiler tube having a nickel-chromium weld area composition and a nickel-chromium non-weld area coating composition, as shown above, but do not appear to explicitly teach the tubes to be a series of tubes connected by plates, where the plate material is notched, however Cochrane teaches a boiler with a series of interconnected tubes forming a notch at one end (*See figures 1 and 7*). One of ordinary skill in the art at the time of the invention would have found it obvious to construct a boiler in this known manner

using the coated boiler parts as shown above because this configuration is known and has been demonstrated to be an effective configuration in the construction of boilers. Additionally the weld material and coating of Ogawa *et al.* and Tour resist cracking especially in the presence of thermal stress, which will extend the expected lifetime of the boiler of Cochrane *et al.*

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adam C. Krupicka whose telephone number is (571)270-7086. The examiner can normally be reached on Monday - Thursday 7:30am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571) 272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Adam C Krupicka/
Examiner, Art Unit 1794

/JENNIFER MCNEIL/
Supervisory Patent Examiner, Art Unit 1794